

What is claimed is:

1. An inductor comprising a plurality of unit inductors each having a vertical spiral structure, wherein a vertical cross-section of at least one unit inductor selected from the plurality of unit inductors is an inverted trapezoid.
2. The inductor as claimed in claim 1, wherein a vertical cross-section of the remaining unit inductors has an inverted trapezoid structure.
3. The inductor as claimed in claim 1, wherein a vertical cross-section of the remaining unit inductors has an inverted trapezoid, circular, triangular, rectangular, or elliptical structure.
4. The inductor as claimed in claim 2, wherein each unit inductor of the plurality of unit inductors has a same size.
5. The inductor as claimed in claim 2, wherein one unit inductor selected from the plurality of unit inductors has a size that is different from that of the rest.
6. The inductor as claimed in claim 1, wherein the at least one unit inductor selected from the plurality of unit inductors comprises:

multi-layer metal layers; and
conductive plugs that vertically connect the multi-layer metal layers,
wherein layers of the multi-layer metal layers formed between top and
bottom layers of the multi-layer metal layers include two metal layers, and
metal layers of the multi-layer metal layers formed under the top layer of the
multi-layer metal layers do not overlap except at portions thereof connected
via the conductive plugs.

7. The inductor as claimed in claim 6, wherein the metal layers of
the multi-layer metal layers formed under the top layer of the multi-layer
metal layers are symmetrical.

8. The inductor as claimed in claim 6, wherein the top layer of the
metal layers is connected to a metal layer under a top layer of a unit inductor
adjacent to the selected unit inductor.

9. The inductor as claimed in claim 6, wherein metal layers
formed on at least one layer of the multi-layer metal layers formed between
the top layer of the multi-layer metal layers and the bottom layer of the
multi-layer metal layers have a same length, thickness, and width.

10. The inductor as claimed in claim 6, wherein at least one of a length, thickness, and width of metal layers formed on at least one layer of the multi-layer metal layers formed between the top layer of the multi-layer metal layers and the bottom layer of the multi-layer metal layers is different from a respective length, thickness, and width of the others.

11. The inductor as claimed in claim 7, wherein metal layers formed between the top layer of the multi-layer metal layers and the bottom layer of the multi-layer metal layers have a same length, thickness, and width.

12. The inductor as claimed in claim 7, wherein at least one of a length, thickness, and width of metal layers formed on different layers between the top layer of the multi-layer metal layers and the bottom layer of the multi-layer metal layers is different from a respective length, thickness, and width of the others.

13. The inductor as claimed in claim 6, wherein the conductive plugs have the same length.

14. The inductor as claimed in claim 6, wherein conductive plugs on different layers have different lengths.

15. The inductor as claimed in claim 2, wherein the at least one unit inductor selected from the plurality of unit inductors comprises:

- multi-layer metal layers; and
- conductive plugs that vertically connect the multi-layer metal layers,

wherein layers of the multi-layer metal layers formed between top and bottom layers of the multi-layer metal layers include two metal layers, and metal layers of the multi-layer metal layers formed under the top layer of the multi-layer metal layers do not overlap except at portions thereof connected via the conductive plugs.

16. The inductor as claimed in claim 3, wherein the at least one unit inductor selected from the plurality of unit inductors comprises:

- multi-layer metal layers; and
- conductive plugs that vertically connect the multi-layer metal layers,

wherein layers of the multi-layer metal layers formed between top and bottom layers of the multi-layer metal layers include two metal layers, and metal layers of the multi-layer metal layers formed under the top layer of the multi-layer metal layers do not overlap except at portions thereof connected via the conductive plugs.

17. The inductor as claimed in claim 4, wherein the at least one unit inductor selected from the plurality of unit inductors comprises:

- multi-layer metal layers; and
- conductive plugs that vertically connect the multi-layer metal layers,

wherein layers of the multi-layer metal layers formed between top and bottom layers of the multi-layer metal layers include two metal layers, and metal layers of the multi-layer metal layers formed under the top layer of the multi-layer metal layers do not overlap except at portions thereof connected via the conductive plugs.

18. The inductor as claimed in claim 5, wherein the at least one unit inductor selected from the plurality of unit inductors comprises:

- multi-layer metal layers; and
- conductive plugs that vertically connect the multi-layer metal layers,

wherein layers of the multi-layer metal layers formed between top and bottom layers of the multi-layer metal layers include two metal layers, and metal layers of the multi-layer metal layers formed under the top layer of the multi-layer metal layers do not overlap except at portions thereof connected via the conductive plugs.